

J1 routing over a virtual private network responsive to at least one of the service categories.

J2 24. (Amended) A method comprising the step of utilizing separate routing tables within an asynchronous transfer mode switch for each of a plurality of service categories; wherein the service categories are determined using Internet protocol (IP) data within a data field of a packet passed by the asynchronous transfer mode switch.

J3 27. (Thrice Amended) In a fast packet network, a method comprising the steps of: receiving a fast packet; comparing an address of the fast packet with a layer 3 Internet protocol (IP) address contained within the fast packet; and using a private routing table, determining whether the address is consistent with the layer 3 internet protocol address; wherein the step of determining includes examination of a sending address or a destination address.

J4 K2 32. (Twice Amended) A network comprising: customer premises equipment; a fast packet switch coupled to the customer premises equipment with at least one permanent virtual circuit and receiving a plurality of frame relay data packets, the fast packet switch including address translation circuitry for translating user data within at least one of the frame relay data packets into a fast packet address; wherein the translation circuitry is responsive to a plurality of different service categories and configured to determine a quality of service responsive to layer 4 data.

J5 43. (Thrice Amended) An asynchronous transfer mode switch comprising translation circuitry for translating a plurality of frame relay packets into asynchronous transfer mode cells having an address responsive to a data link connection identifier (DLCI) contained within a header data field and to layer 3 Internet protocol (IP) data contained within a user data field of

the frame relay packets.

35 44. (Thrice Amended) An asynchronous transfer mode switch comprising translation circuitry for translating a plurality of frame relay packets into asynchronous transfer mode cells having an address responsive to a data link connection identifier (DLCI) contained within a header data field and to layer 4 Internet protocol (IP) data contained within a user data field of the frame relay packets.

36 46. (Amended) A multi-layer asynchronous transfer mode switch having separate routing tables for each of a plurality of service categories, wherein the routing tables are separated based on data link connection identifiers.

37 51. (Four Times Amended) A method comprising the steps of:
receiving a plurality of frame relay frames at an asynchronous transfer mode switch in a network; and
transmitting at least a portion of the frames over one of a plurality of virtual networks responsive to data link connection identifier (DLCI) and Internet Protocol (IP) information contained in at least one of the frame relay frames.

Please add the following new claims:

38 56. (New) A method comprising the steps of:
receiving data packets into a fast packet network, said data packets comprising header data in a header data field and user data in a user data field, wherein said header data comprises a service category indicator; and
switching said data packets within the fast packet network responsive to the header data, each service category indicator corresponding to a plurality of destinations.

57. (New) The method of claim 56 further including the step of routing responsive to the user data.
58. (New) The method of claim 56 further including the step of routing within a virtual private network responsive to the user data.
59. (New) The method of claim 56 further including the step of routing within a virtual private network, the virtual private network comprising trading partners, responsive to the user data.
60. (New) The method of claim 56 further including the step of routing within a closed user group responsive to the user data.
61. (New) The method of claim 56 further including the step of discriminating between a plurality of service categories based on the header data so that packets with a first service category indicator receive a first Quality of Service (QoS) and packets with a second service category indicator receive a second QoS.
62. (New) The method of claim 57 wherein the user data comprises multicast data.
63. (New) The method of claim 57 wherein the user data comprises voice data.
64. (New) The method of claim 57 wherein the user data comprises video data.
65. (New) The method of claim 57, wherein the user data comprises an IP address.
66. (New) The method of claim 56, wherein the data packets are frame relay data packets.

67. (New) The method of claim 56, wherein the data packets are asynchronous transfer mode data packets.

68. (New) A method comprising the steps of:
receiving frame relay data packets into a fast packet network, and
switching said frame relay data packets within the fast packet network responsive to a data link connection identifier (DLCI),
each DLCI corresponding to a plurality of destinations.

69. (New) The method of claim 68, wherein the plurality of destinations comprises a virtual private network.

70. (New) The method of claim 69, each frame relay data packet comprising user data in a user data field,
the method further comprising the step of routing said frame relay data packets within the virtual private network responsive to the user data.

71. (New) The method of claim 70, wherein the user data further comprises one of voice data, video data, and multicast data.

72. (New) The method of claim 70, wherein the user data comprises an IP address.